Amendments to the Claims

Listing of Claims

This Listing of Claims shall replace all prior versions and listings of claims in the application.

1-34. (Cancelled)

35. (Currently Amended) A method for isolating nucleic acids from a solution by binding to a solid phase comprising the steps of:

a. providing a solution containing at least one nucleic acid;

b. combining said solution with additives containing non-chaotropic multivalent cations and non-chaotropic monovalent cations in combination;

c. optionally combining said solution with an alcohol;

d. providing a solid carrier, wherein said solid carrier comprises at least one constituent selected from the group consisting of SiO_2 suspensions, aerosols, magnetized silica particles, cut silicic acid, pyrogenous silicic acid, magnetic silica particles, glass fiber fleeces, silica membranes or membranes that carry functional groups that conform to glass fiber fleeces or silica membranes;

e. contacting said solution with said carrier and binding said at least one nucleic acid to said carrier; ~~and~~

f. removing said nucleic acid from said carrier by a water or a tris solution; and

g. including wherein said method does not include introduction of chaotropic reagents.

36. (Previously presented) The method of claim 35, wherein said non-chaotropic multivalent and/or monovalent cations are metallic cations.

37. (Previously presented) The method of claim 35, wherein the ratio of monovalent cation to said multivalent cation is between about 9:1 to about 1:9.

38. (Previously Presented) The method of claim 35, wherein the final concentration of the salt components in solution before step (e) is greater than 5 mMol and less than 0.5M.

39. (Previously Presented) The method of claim 35, wherein said alcohol is selected from the group consisting of ethanol or isopropanol.

40. (Previously Presented) The method of claim 35, further comprising addition of tris-HCl, or polyvinylpyrrilodone to the solution containing at least one nucleic acid.

41-43. (Cancelled)

44. (Previously Presented) The method of claim 35, further comprising the use of at least one member of the group consisting of water or water and tris-HCl is used as an elution buffer.

45. (Previously Presented) The method of claim 35, wherein said multivalent cations are divalent cations.

46. (Previously Presented) The method of claim 35, wherein said multivalent cations are Mg^{2+}, Ca^{2+}, Zn^{2+} or Mn^{2+}.

47. (Previously Presented) The method of claim 35, wherein said monovalent cations are selected from the group consisting of NH_4^+, Na^+, or K^+.

48. (Cancelled)

49. (Previously Presented) The method of claim 35, wherein said alcohol is selected from the group consisting of ethanol, isopropanol, polyethylene glycol, and mixtures of the same.

50. (Previously Presented) The method of claim 35, wherein the pH value of the binding buffer is adjusted with tris-HCl.

51. (Previously Presented) The method of claim 47, wherein the solution of step (e) comprises no alcohol and has a pH between 8.5-9.5.

52. (Previously Presented) The method of claim 35, wherein the pH value of the solution of step (e) comprises an alcohol and has a pH of between 5.0 and 9.5.

53-56. (Cancelled)

57. (Previously Presented) The method of claim 35, wherein said carrier is washed using a washing buffer, wherein said washing buffer has a pH between 5 and 10, does not comprise alcohol, and comprises at least one monovalent and at least one multivalent cation in ionically weak concentrations of each cation of less than 5 mmol/liter.

58. (Previously Presented) A test kit to isolate DNA from base materials comprising: an aqueous solution comprising a binding buffer, said binding buffer comprising non-chaotropic monovalent and non-chaotropic multivalent cations in combination, optionally an alcohol, and optionally additives for adjusting pH value;

optionally a washing buffer comprising non-chaotropic monovalent and multivalent cations and optionally additives for adjusting the pH value, but excluding alcohol;

an elution buffer; and

a solid carrier comprising constituents selected from the group consisting of SiO_2 suspensions, aerosols, magnetized silica particles, cut silicic acid, pyrogenous silicic acid, magnetic silica particles, glass fiber fleeces, silica membranes or membranes that carry functional groups that conform to glass fiber fleeces or silica membranes.

59. (Previously Presented) The test kit of claim 58, wherein said non-chaotropic multivalent cations of said aqueous solution are divalent cations.